Remarks

I. Introduction

This is in response to the Office Action dated December 15, 2003. The Office Action rejected claims 1, 2, 4-10 and 12-16 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,006,264 (Colby et al.) in view of U.S. Patent No. 6,374,297 (Wolf et al.).

Applicant traverses the rejection in view of the arguments below. Claims 1, 2, 4-10 and 12-16 remain for consideration.

In rejecting the pending claims, the Office Action relies mainly on Colby et al. as disclosing most of the claim limitations, while relying on Wolf et al. as disclosing the limitation of modifying a local load weight. However, for the reasons discussed below, a combination of Colby et al. and Wolf et al. does not result in the claimed invention because several claim limitations are missing from both Colby et al. and Wolf et al.

First, the present invention is directed to adjusting the transmission rate of a terminal which is sending data to one or more servers. Colby et al., on the other hand, does not adjust the transmission rate of the terminals. Instead, Colby et al. intercepts data sent from a client terminal and directs the data to an appropriate server. There is no adjustment made to the transmission from the terminal (client). The terminal of Colby et al. sends data as it normally does, and the load balancing is performed at a special network node. This is made clear in Colby et al. at col. 2 lines 48-58, "when a client ...makes a content request, the request is **intercepted** by a content-aware flow switch, which seamlessly forwards the content request to a server that is well-suited to serve the content request" (emphasis added). Colby et al. in the same cited section also indicates that "[t]he entire process of server selection is transparent to the client". It is therefore clear that in Colby et al. the load balancing processing takes place at a "content-aware flow switch" which intercepts the data transmissions of the terminals. There are no adjustments made at the terminal.

The present invention, as claimed in claim 1, is directed to a method for "adjusting the transmissions **from the at least one terminal** to the at least one server".

Unlike Colby et al., there is no need for a dedicated network switch to intercept data transmitted from the terminal. Instead, a method in accordance with the present invention adjusts transmissions "from the at least one terminal". This claim limitation is neither disclosed nor suggested by Colby et al.

Independent claim 9 contains a similar claim limitation of "adjusting the transmissions of the at least one terminal to the at least one server". Thus, again, the transmission of the terminal is adjusted to accomplish the load balancing, unlike the Colby et al. system which performs load balancing at a network switch which intercepts client transmissions.

Further, the Office Action admits that Colby et al. does not disclose modifying local load weights as claimed. The Office Action relies on Wolf et al. as providing the missing disclosure. However, as will be described, Wolf et al. does not disclose adjusting transmissions of terminals by modifying local load weights as claimed. Claim 1 contains the limitation of "adjusting the transmissions ... based on the **transmission rate** by **modifying at least one local load weight** to move a load from at least one overloaded server to at least one non-overloaded server". As defined in the specification, the transmission rate is a rate at which a terminal is permitted to transmit data to a particular server (specification page 4, lines 28-29). Also as described in the specification, the modification of a local load weight will result in distributing data transmissions from the terminals to various servers. For example, as disclosed in the specification at page 11, lines 13-23, the transmission rate may include the weight of a particular server, which is the probability of a client distributing a non-blocked data transmission to the particular server. This particular technique for adjusting transmissions, which is clearly claimed in claim 1, is not disclosed nor suggested by Wolf et al. While Wolf et al. does disclose load balancing, it performs load balancing in a very different way, i.e., by using graph theory. This is clear from the disclosure of Wolf et al. For example, at col. 3, lines 28-31 (which is the section cited by the Office Action), Wolf et al. states that its load shifting method is "graph-theoretic". This use of graph techniques is made clear throughout the specification of Wolf et al. (see, in particular, Figs. 4, 5, and 6). The method for load balancing in Wolf et al is described in connection with the flowcharts of Figs. 1 and 2

(see specification at col. 8, line 13 et seq.) which clearly indicate the use of graph theory in the load balancing determination (see, e.g., steps 230 and 240).

In contrast to Wolf et al., the present invention, as claimed in claim 1, is directed to the use of transmission rates and local load weights for load balancing. These specifically claimed techniques are different from Wolf et al.'s graph techniques. As such, Wolf et al. does not disclose these claim limitations.

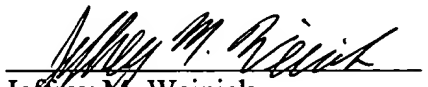
Independent claim 9 also contains the limitation of "adjusting the transmissions ... based on the **transmission rate** by **modifying at least one local load weight** to move a load from at least one overloaded server to at least one non-overloaded server", and is therefore allowable for the same reasons as discussed above. Thus, it is submitted that independent claims 1 and 9 are allowable over the cited references.

All remaining dependent claims depend upon, and incorporate the limitations of, one of the independent claims described above and are allowable for the reasons discussed above. In addition, the dependent claims add additional patentable subject matter as follows.

Claims 5-7 and 13-15 are related to, and contain the limitation of, "adjusting a local load coefficient". As described in the specification at page 6, lines 13-19, a load coefficient represents the probability of the terminals distributing a data transmission to one of the servers rather than blocking the data transmission. The use of this type of load coefficient is not disclosed in the cited references. The Office Action cites Colby et al. at Col. 7, line 58 – col. 8, line 5; Fig. 2 Flow admission control, and col. 9, lines 58-67 as disclosing the limitations relating to the load coefficient. However, these cited sections of Colby et al. are unrelated to the use of a load coefficient as set forth in the present claims. A review of these cited sections indicates that they do not disclose a load coefficient which represents the probability of the terminals distributing a data transmission to one of the servers rather than blocking the data transmission. If the Examiner persists in the rejection of claims 5-7 and 13-15, Applicant respectfully requests an explanation as to how the cited sections disclose the particular cited claim limitations so that Applicant may more fully respond to the rejection.

For the reasons discussed above, all pending claims are allowable over the cited art. Reconsideration and allowance of all pending claims is respectfully requested.

Respectfully submitted,



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